

Test Objective- The objective of the PRE-outage testing is to document operating conditions prior to the boiler modifications. The major (4 week) outage modifications consist of installing an overfire air system and extending the superheater platen section. PRE-outage testing is being conducted on the request from the Utah Division of Air Quality based on concerns with NOx and CO emission levels, after the overfire air system is installed.

Test Method- Testing will be similar to our routine monthly performance test utilizing the PI data acquisition system to document test conditions. In addition, a test grid is setup at the boiler outlet (11th floor) using 14 test probes at four different depths for a total of 56 points. The gas sampling system is setup with both east and west side averaging systems consisting of bubblers, vacuum pumps, chillers and desiccant filters. The cooled, dry, filtered gas samples are then analyzed for O₂, CO₂, CO and NO_x. Thermocouples are also at each location to get averaged boiler gas outlet temperatures.

In addition to east and west side averaged gas conditions, individual test points will also be taken during a separate test to develop backpass test grid profiles. These profiles will include O₂, CO, NO_x and temperatures which will be used to troubleshoot and diagnosis burner setup and air flow balancing.

Fly ash samples will also be taken and correlated with the test results. We will need 2 Operators to help support fly ash sample collection. ISG will be collecting the fly ash samples for Test 1 conditions (at 5 different O₂ test points). All fly ash hopper rows need to be available (no maintenance work) and hoppers will need to be pulled down prior to the test and between each test point.

Coal samples will be taken throughout the test period at the coal feeder inlet (test taps installed special for testing) . Bottom ash samples will also be collected during Test 2.

Test Personal: The testing is being conducted by IPSC Engineering who is leasing test quality gas analyzers from Power Generation Technologies (PGT). We have a PGT technician- Ricky Mull to help assist setup of the test equipment and data collection hardware and software (he will be utilized as needed).

Test Coordinator- Aaron Nissen
Gas Analyzers and Test Grid- Garry Christensen & Rob Jeffery
Coal & Fly Ash sample collection- Dave Spence & Bill Tanner
Fly ash sample collection- - ISG Rod Hansen, Rick Fowles/ Kurt Aldredge

Test Schedule (also reference BID sheets)

Test 1 (Tuesday 2/25/03 7:00 to 19:00)– Boiler tested at 5 different O₂ levels (3.5%, 3.0%, 2.5%, 2.0% & 1.5%) Each test point needs 2 hours, allowing ½ to 1 hour between test points to lower O₂, pull fly ash and sootblow for temperatures.

Test 2 (Wednesday 2/26/03 7:00 to 19:00)– Boiler at 2.5% O₂, stable operation for the entire test period to allow for individual test point profiles (O₂, CO, NO_x and temperature) Also coal samples, fly ash samples and bottom ash samples will be taken just prior to the end of the test.

Test 3 (Thursday 2/27/03 7:00 to 19:00) (basically a backup day or retest day depending upon outcomes of Test 1 and Test 2) Problems may range from unstable test conditions (pulv or feeder trips or unavailability of other equipment) to a test gas analyzer going bad.

For all tests, the gas analyzers need to be started, warmed up and calibrated prior to the test period. This process takes 1 to 1 ½ hours to complete. During this time, all tubing, bubblers, chillers, desiccant filters, and dust filters will be checked for air leaks.